

**MONITOR DEVICE POLISHING DEVICE THEREWITH AND MONITOR METHOD, AND  
POLISHING METHOD**

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**Abstract:**

**PROBLEM TO BE SOLVED:** To provide a monitor device and a monitor method, which enable highly precise measurement of remaining film thickness or optical detection of a process end point practically to any materials, a miniaturized and light- weight polishing device with the monitor device, which enables highly precise polishing, and a method for polishing a semiconductor wafer, wherein a semiconductor element is formed, highly precisely by using the polishing device in a CMP polishing process for polishing a semiconductor wafer with a rotating polishing body. **SOLUTION:** This monitor device has a stationary light source which monitors polishing state by reflection signal light obtained by casting probe light on a surface to be polished and emits probe light when a surface to be polished is polished, a photodetector of nonrotation which receives reflection signal light, and a regression optical part which is incorporated in a polishing body part, can rotate together with a polishing body and projects reflection signal light from a prescribed position on injecting probe light to a prescribed position. **COPYRIGHT:** (C)2001,JPO

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